UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

SECURITIES AND EXCHANGE COMMISSION, Plaintiff, - v. - ANDREAS BADIAN, JACOB SPINNER, MOTTES DRILLMAN, JEFFREY "DANNY" GRAHAM, POND SECURITIES CORPORATION d/b/a POND EQUITIES, EZRA BIRNBAUM and SHANE HIRSCH, Defendants.	Case No. 06 CV 2621 LTS

PLAINTIFF SECURITIES AND EXCHANGE COMMISSION'S MEMORANDUM IN SUPPORT OF ITS MOTION *IN LIMINE* TO EXCLUDE THE PROPOSED EXPERT TESTIMONY OF STEPHEN D. PROWSE AND TSVETAN N. BELORESHKI

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INTRODUCTION

Plaintiff, Securities and Exchange Commission ("SEC"), has filed a motion *in limine* requesting that the testimonial and documentary opinions of Stephen D. Prowse ("Prowse") and Tsvetan N. Beloreshki ("Beloreshki"), two of defendant Andreas Badian's ("Badian") proffered experts, be excluded from this trial. For the reasons set forth below, the SEC respectfully requests that its motion be granted.

ALLEGATIONS

The SEC has charged Badian and the other defendants with engaging in a scheme to manipulate the price of the common stock of Sedona Corporation ("Sedona"). [redacted][1] As the Court recognized in denying Badian's motion to dismiss, the allegations include the following:

(1) The financial instrument underlying this scheme was a Convertible Debenture ("Debenture"), which Sedona and Amro entered into on November 22, 2000. The Debenture authorized Amro to convert the stock beginning on March 22, 2001, at a variable rate based on the market prices for five days preceding the submission of a conversion letter, and prohibited short sales prior to conversions. *SEC v. Badian*, 2008 WL 3914872, at 1 (S.D.N.Y. 2008).

(2) From March 1 through March 29, 2001, Badian directed sales to be made out of a Pond proprietary account that he covered with sales out of Amro's Refco account. The reported volume due to the two-step transactions was over 40% of the total volume of

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[1] [redacted]

Sedona's sales. As a consequence, Badian was able to increase the number of conversion shares received in four conversions between March 27, 2001 and April 16, 2001. *SEC v. Badian*, 2008 WL 3914872, at *2.

(3) Then, Badian deposited the converted shares into an Amro account at a third brokerage firm sold them from that account as wash sales to the Amro Refco account to cover the short position in that account. On at least ten occasions during April 2001, Badian directed the wash sales to be made from one Amro account to another without any change in beneficial ownership of the Sedona stock. *SEC v. Badian*, 2008 WL 3914872, at 2.

The record developed in the course of discovery supports and expands upon the allegations in the Complaint. [redacted]

SUMMARY OF ARGUMENT

Prowse and Beloreshki served their initial expert report ("Initial Report") on the SEC on November 24, 2009. Prowse took the lead in drafting the Initial Report based on a draft Beloreshki provided to him.[2] The Initial Report has strikingly similar language to language in a draft affidavit Beloreshki prepared in December of 2004 while in possession of a legal memorandum prepared by counsel for Badian in this case.[3] The Initial Report is also based on the exact same regressions that Beloreshki ran in 2003 while working at another

[2] Deposition of Stephen D. Prowse, p. 97 (March 5, 2010 and April 9, 2010) ("Prowse Depo.").

[3] SEC Exhibit 266, (Beloreshki Draft Affidavit (12/08/ 2004); SEC Exhibit 267, (Badian's Draft Wells Submission (12/08/2004).

consulting firm retained by Badian's counsel.[4] Nevertheless, Prowse and Beloreshki would have the Court believe that they objectively concluded that "Badian did not pursue . . . a manipulative strategy aimed at artificially depressing the price of Sedona" stock because of their analyses of market, industry and company specific factors, and econometric and statistical analyses they claim is scientifically reliable and relevant.[5]

Nothing could be further from the truth. Prowse and Beloreshki did not do any econometric or statistical analyses to verify the accuracy of Beloreshki's earlier assumptions. They did not do any regression analyses to ascertain whether the market, industry, and company specific factors they extracted from the December 2004 draft affidavit were statistically related to Sedona's stock price during the period of Badian's manipulation in March and April 2001.[6] They did not attempt to determine whether there were any defects in the statistical models they relied upon, including whether there was incorrectly designated data included in the analyses, or whether the analyses contained incorrect assumptions that caused some regressions but not others to reveal significance.[7]

Importantly, they did not seek to determine whether any testimony or documents existed that would have aided them in defining their analyses or in forming their opinions. They did not attempt to determine whether Badian's aggressive double reported sales in March

[4] The first origin of Prowse and Belorshki's Report is a monograph that Beloreshki and counsel for Badian co-authored in 2003. That paper, addressed to potential defendants in market manipulation cases, sought to explain how to reduce the costs of defending purportedly frivolous cases by issuers of Future Priced Securities, such as Sedona's Convertible Debenture. SEC Exhibit 240, *The Frontiers of Convertibles Financing* (B-P Depo. Ex. 5). Prowse testified that he considered the paper when he assumed the responsibility for drafting the Expert Report in submitted on November 24, 2009. Prowse Depo. pp. 196:8-14, 449:25-450:6.

[5] SEC Exhibit 279, Prowse and Beleroshki's Initial Report, at pp. 2 and 14, ¶¶ 2 and 62. (November 24, 2009) ("P-B Initial Report").

[6] Prowse Depo., pp.148:10-152:24; 77:19-79:6.

[7] For example, they included in their regressions "transfers" and "principle" transactions they acknowledged were not reported to the market without ascertaining whether the transactions became known to the market in other ways. Prowse Depo. pp. 131:3-134:10.

2001 when the price fell prior to conversions and his wash sales between Amro accounts held at different brokers in April 2001 when the price increased placed artificial information into the market for Sedona's stock.[8] They did not listen to the audio tapes or read the transcripts of those tapes that record Badian instructions to manipulate the price of Sedona's stock.[9] Prowse and Beloreshki did not do so because in their view what Badian said, what he did and what he knew between February 21, 2001, when he started his scheme and when he made publicly reported wash trades beginning April 12, 2001, are facts irrelevant to their opinions.[10]

Additionally, Prowse and Beloreshki did not include in the Initial Report regressions known to them that contradicted their opinion with statistically significant results. When discovered by the SEC, they claimed the omissions were an inadvertent oversight.[11] Since the SEC's discovery, they have attempted to justify their failure to include the regressions that found significance with what they refer to as a "Bonferroni" correction,[12] and by a belated discovery of an accurate data point they characterize an "outlier" which they now claim renders the regressions revealing significance inadequate.[13] The authoritative literature upon which they claim to rely for these newly disclosed views does not support their position.

The issue in this case is whether Badian placed artificial information into the market for Sedona's stock knowing that the information caused or had the potential to cause harm to sellers and buyers or was reckless in not knowing it did so. Their recitation of the financial events of the last thirty years, the history of Sedona's finances and its efforts to capitalize its

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[8] Prowse Depo., pp. 147:2 - 148:8.

[9] Prowse Depo., pp. 250:11 – 252:22.

[10] Prowse Depo., pp. 250:11 – 252:22.

[11] Prowse Depo., pp. at 108:9 - 112:13.

[12] Prowse Depo, pp. 267:18 - 271:18, 272:23 - 274:9.

[13] Prowse Depo., pp 274:21 - 276:15, 382:20 - 329:23, 350:4 - 353:5, 413:1 4- 414:16.

operations, and significantly the statistical analyses they performed do not, and cannot answer the question.

ARGUMENT

I. *Daubert* Standards In Motion *In Limine* To Exclude Expert Testimony

The purpose of an *in limine* motion is to enable the Court to rule in advance of trial on admissibility of certain forecasted evidence, including opinion testimony, without lengthy argument at, or interruption of, the trial. *Palmieri v. Defaria*, 88 F.3d 136, 141 (2d Cir. 1996). The proponent of the testimony has the burden of establishing that the pertinent admissibility requirements are met by a preponderance of the evidence. *Bourjaily v. U.S.*, 483 U.S. 171, 175-76 (1987); *In re Rezulin Products Liability Litigation*, 309 F. Supp 2d 531, 539 (S.D.N.Y. 2004). To be admissible, the party offering an expert's opinion must demonstrate by a preponderance of the evidence that it is relevant, reliable and will be helpful to and not confuse the jury. *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 589 (1993); *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 141 (1999).

A. Relevance

To be relevant, the expert's opinion must have the tendency "to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence." Fed. R. Evid. 401; *accord, Amorgianos v. Nat'l R. R. Passenger Corp.*, 303 F. 3d 256, 265 (2d Cir. 2002). In order to be relevant the opinion must "fit" the facts of the case. *Daubert*, 509 U.S. at 591-92.

B. Reliability

To determine whether an expert's opinion is based on reliable scientific knowledge, the *Daubert* court stressed that court are to evaluate such factors as: (1)

whether the underlying theory or technique has been tested; (2) whether it has been subjected to peer review and publication; (3) whether it has an acceptable known or potential rate of error; and (4) whether it is generally accepted in the relevant scientific community. *Daubert*, 509 U.S. 593-94.

When applying these non-exclusive *Daubert* factors, courts have applied traditional standards of reliability, including (1) whether the methodology has been applied in non-judicial setting or has only been applied to support one position in the pending or similar litigation, and (2) the credibility of the expert, such as whether the expert has contradicted his or her position in other situations. *U.S. v. Mitchell*, 365 F.3d 215, 243 (3d Cir. 2004); *In re Unisys Savings Plan Litigation*, 173 F.3d 145, 155-156 (3d Cir. 1999). As the Supreme Court stressed in the companion case to *Daubert*, the Court must "make certain that an expert, whether basing testimony on professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." *Kumho Tire Co.*, 526 U.S. at 152.

Where a purported expert fails to meet the requirements of the Federal Rules of Evidence and *Daubert*, courts within the Second Circuit have not hesitated to exclude the expert's testimony at trial.[14] As the Second Circuit has explained, "[w]ith the growth of intricate securities litigation over the past forty years, we must be especially careful not to

[14] *See, e.g., Cayuga Indian Nation of New York v. Pataki*, 83 F.Supp.2d 318 (S.D.N.Y.2000); *Donnelly v. Ford Motor Co.*, 80 F.Supp.2d 45 (E.D.N.Y. 1999); *Mink Mart, Inc. v. Reliance Ins. Co., 65 F.Supp.2d 176, 181 (S.D.N.Y.1999). Because the potential to confuse the jury is significant in securities cases, the* Second Circuit has emphasized that the Court must be careful to prevent a purported expert from giving testimony stating ultimate legal conclusions based upon facts, or giving testimony that tracks the language of the statute or the law that a defendant is accused of violating. *U.S. v. Bilzerian*, 926 F.2d at 1294; *U.S. v. Scop*, 846 F.2d 135, 140, *modified*, 856 F.2d (2d Cir. 1988); *Marx & Co. Inc. v. DinersClub, Inc.*, 550 F. 2d 505, 510-511 (2d Cir. 1977).

allow trials before juries to become battles of paid advocates posing as experts on the respective sides" *Marx & Co. Inc. v. DinersClub, Inc.*, 550 F. 2d 505, 511 (2d Cir. 1977). Expert testimony should be excluded if it is speculative or conjectural, or if it is based on assumptions that are so unrealistic and contradictory as to suggest bad faith, or to be in essence an apples and oranges comparison. *Boucher v. United States Suzuki Motor Corp.*, 73 F.3d 18, 21 (2d Cir.1996); *Nimely v. City of New York*, 414 F.3d 381, 396 (2d Cir. 2005) (*quoting Joiner*, 522 U.S. at 146).

II. <u>Prowse And Beloreshki's Expert Report</u>

Prowse and Beloreshki concluded in their Initial Report, their deposition testimony and a Sur-Rebuttal Report that:

> [T]he economic analysis and empirical investigation [we did] demonstrate that Rhino [Badian] *did not pursue*, and had no rational incentive to pursue, a manipulative strategy aimed at artificially depressing the price of Sedona share. Rather the decline in Sedona's stock price is consistent with market, industry and Company-specific factors *that have nothing to do with any alleged manipulation* by Rhino.[15]

The basis for this conclusion is their opinion that:

> 1) The risks inherent in the Debentures issued by Sedona on November 23, 2000 exceed those of high-yield debt instruments and approached those of distressed debt. *[Badian] employed a rational strategy* . . . given the high risk associated with investing in the Debentures;[16]
>
> 2) The decline in Sedona's stock price over the period of [Badian's] trading was consistent with the contemporaneous deterioration in the combination of market, industry and Company-specific factors . . . unrelated to the alleged market manipulation by [Badian];[17] and
>
> 3) "[Q]quantitative and statistical tests" indicate that *"[Badian's] transactions in Sedona's common shares did not have an impact on Sedona's stock price."*[18]

[15] SEC Exhibit 279, P-B Initial Report at pp. 2 and14, ¶¶ 2 and 62 (Emphasis added).

[16] SEC Exhibit 279, P-B Initial Report at pp. 1 and 5-7, ¶¶ 1 and 17-33 (Emphasis added).

[17] SEC Exhibit 279, P-B Initial Report at pp. 1 and 5-7, ¶¶ 1 and 34-50 (Emphasis added).

[18] SEC Exhibit 279, P-B Initial Report at pp. 2 and 11-14, ¶¶ 2 and 51-62 (Emphasis added).

As explained above and in greater detail below, their opinions are not scientifically reliable and, importantly, not relevant to the question they purport to answer.

III. Prowse and Beloreshki's Speculation About Market, Industry And Company Specific Factors Are Not Relevant Nor Reliable Evidence About Badian's Intent

Prowse and Beloreshki' s description of the economics of the Debenture, characterization of Badian's trading strategy, and Sedona's vulnerability to market, industry and company specific factors are based on unfounded speculation. As SEC's experts Glosten and Jones have explained, neither the economics of the Debenture nor the market, industry and company specific factors are probative of what Badian did or did not do in March and April of 2001. Moreover, Prowse and Beloreshki's speculation about whether Badian was employing a rational hedging strategy is simply wrong.[19]

A. The Lack Of An Incentive To Manipulate The Stock Underlying The Debenture Is Contradicted By The Authoritative Academic Literature

Prowse and Beloreshki argue that, because of the economics of the Debenture through which Badian acquired the Sedona stock, the price declines were due not to manipulation, but to rationale market factors. In support of this position, they refer to one article which does not even address the issue,[20] and ignore the widely recognized scholarly peer - reviewed article on the subject.[21] They do not rely on an article of another of Badian's expert's –Professor Stephen Thel-- which concludes that instruments with variable future price provisions contain

[19] SEC Exhibit 421, Expert Rebuttal Report, Lawrence R. Glosten, Ph.D. and Charles M. Jones, Ph.D. pp. 7-15 (February 10, 2010) ("G-J Rebuttal Report").

[20] See SEC Exhibit 279, P-B Initial Report at p. 5, n.2, citing Chaplinsky and Haushalter, "Financing Under Extreme Uncertainty: Contract Terms and Returns to Private Investment in Public Equity." (May 2006).

[21] Exhibit 262, Hillion and Vermaelin, Death Spiral Convertibles, 71 J. of Fin. Econ. 71 (2004).

significant incentives to manipulate the price of the underlying stocks[22] As Professors Glosten and Jones have demonstrated, the Sedona Debenture is ideally suited for manipulation.[23]

B. The Facts Belie Prowse And Beloreshki's Speculation That Badian Was Hedging Liquidity And/Or Delisting Risk

Prowse and Beloreshki claim that Badian's activity was consistent with hedging against liquidity and delisting risk inherent in Sedona's Convertible Debenture.[24] In doing so, however, they overlook that a hedge is intended to reduce, not increase risk as Badian's activity did in this case.[25] Importantly, they have refused to consider Badian's own words that belie their supposition.[26] Since the Debenture in this case provided for conversion at a variable, not a fixed price, Badian had no price risk.[27] Moreover, unless the price fell below the level required for it to be listed on an exchange there was minimal liquidity risk. Badian's short sales of Sedona stock in violation of the covenant in the Debenture depressed the price and increased the risk that the stock would be delisted, since it was required to maintain a closing price of one dollar for at least one day over a 30 day period.[28] [redacted][29] Consequently, as Professors Glosten and Jones explained, and consistent with what he said at the time, Badian

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[22] Thel, $850,000 In Six Minutes—The Mechanics of Securities Manipulation, 79 Cornell L. Rev. 219, 248 (1993-94) ("When reported prices are used to measure or control rights or obligations in contracts and other relationships, they are tempting targets for manipulation."). In fact, Beloreshki's view expressed in a recent [Proposed] Expert Opinion that "the impact of a long-term debt issuance on a company's stock price need not be uniform or even of a given magnitude or *direction*" supports the SEC's, not Badian's views.

[23] SEC Exhibit 421, G-J Rebuttal Report, at ¶¶ 28 and 30.

[24] SEC Exhibit 279, P-B Initial Report, at ¶¶ 24-33.

[25] Jorion, Phillipe, Financial Risk Manager Handbook (5 ed. Wiley 2009).

[26] Prowse Depo., pp. 250:11 – 252:22.

[27] SEC Exhibit 421, G-J Rebuttal Report, at ¶ 14.

[28] SEC Exhibit 350, NASD/FINRA Listing Requirements.

[29] [redacted].

was not hedging. In fact, his activity increased the risks, and therefore, cannot be characterized as consistent with a hedging strategy as Prowse and Beloreshki speculate.[30]

C. Market, Industry and Company Specific Data Does Not Disprove That Badian Placed Artificial Information Into The Market With *Scienter*

Prowse and Beloreshki's contention that a number of market, industry and company-specific factors,(not market manipulation) explain Sedona's stock price behavior[31] is not relevant to whether Badian released artificial information into the market that he knew or was reckless in not knowing could deceive or mislead buyers or sellers.

While such information may explain why Sedona's stock decreased during the period from 1998 through 2002, it does not provide any scientifically reliable information about the association between these factors and Sedona's price movement during the period in which Badian is alleged to have engaged in illegal manipulative activity.[32] The information about market, industry and company specific factors upon which Prowse and Beloreshki purport to rely is simply a set of compilations of such data. Prowse and Beloreshki did not attempt to isolate and perform statistical analyses to determine the statistical significance of these factors.[33] Consequently, this information does not demonstrate a statistically sufficient link to justify the admission of their opinions to the jury. *See e.g. Brumbaugh v. Sandoz Pharmaceutical Corp.*, 77 F. Supp. 2d 1153, 1156 (D. Mont. 1999); *Jones v. United States*, 933 F. Supp. 894, 899 (N.D. Calif. 1996), *aff'd*, 127 F.3d 1154 (9th Cir. 1997); *In re Breast Implant Litigation*, 11 F. Supp. 2d 1217, 1227-1228 (D. Colo. 1998). As Prowse and Beloreshki recognized in another matter similar to this case:

[30] SEC Exhibit 421, G-J Rebuttal Report, at ¶¶ 14, 16, and 22.

[31] SEC Exhibit 279, P-B Initial Report, at ¶¶ 37-50.

[32] SEC Exhibit 421, G-J Rebuttal Report, at ¶27.

[33] And where they did so, they found there was no statistical significance. Prowse Depo., pp. 148:10 - 152:24.

> Mere observations about the direction of a stock price movement are not generally accepted methodology for determining the stock price reaction to a new announcement let alone for determining whether or not manipulation occurred. A proper analysis would adjust the stock price movements for the movement of the market and determine statistical significance for any price movements.

SEC Exhibit 246, Rebuttal Expert Report, *Pet Quarters, Inc. v. Thomas Badian*, Am. Arb. Assoc (No. 50 180 T 00041 07 (March 19, 2009), at p. 16.[34]

In Prowse and Beloreshki's words in *Pet Quarters*, their analyses of market, industry and company specific factors in this case "lacks scientific basis and is based on nothing but subjective judgments."[35] They have not "demonstrate[d] a causal link sufficient for admission to a finder of fact in court." *Nelson v. American Home Products Corp.*, 82 F. Supp. 2d 954, 969 (W.D. Miss. 2000).[36]

IV. Prowse and Beleroshki's Quantitative And Statistical Analyses Are Not Probative Evidence Of Badian's State Of Mind

In their reports and deposition testimony, Prowse and Beloreshki assert that their statistical analyses demonstrate that Badian did not have the requisite intent to manipulate Sedona's stock in violation of the anti-fraud provisions of the securities laws.[37] Prowse and Beloreshki's arguments are no more legally sound or scientifically reliable than their speculation about market, industry and company specific factors.

Their opinion continues to rely upon a misconception of the intent requirement in securities litigation. To prove Badian's intent, the SEC need only show that he released into

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[34], In another case in the Southern District, Beloreshki submitted an expert report in which he performed a regression analysis to determine whether the issuance of long-term debt had any impact on the performance of a company's common stock. SEC Exhibit 422, [Proposed] Expert Report of Tsvetan N. Beloreshki, in *SEC v. Obus*, Civ. No. 06-cv-3150, at p. 1, ¶5 and pp. 11-12, ¶ 44-47 (August 15, 2008).

[35] SEC Exhibit 246, Rebuttal Expert Report, Pet Quarters, at p. 13.

[36] "The courtroom is not the place of scientific guesswork, even of the most inspired sort. Law lags science; it does not lead it." *Rosen v. Ciba Geigy Corp.*, 78 F.3d 316, 319 (7th Cir. 1996).

[37] See text and notes 16 – 19, *supra*.

the market artificial information that presented a danger of deceiving or misleading buyers or sellers which was either known to Badian or was so obvious that he must have been aware of it.[38]

Prowse and Beleroshki do not, and cannot, dispute that artificial information was placed into the market for Sedona's stock. In fact, they testified they did not look at trade records to see if short sales were double-reported to the market or whether wash sales occurred.[39] Also, they do not argue that artificial information released into the market did not mislead investors or Sedona's officers, or carried a danger of doing so. Significantly, they admit they did not listen to the audio tapes or read the transcripts that contain Badian's instructions to manipulate the stock.[40] They admit that their statistical analyses, even if done properly, only allow them to conclude that the regression does not reject what is referred to as the" null hypothesis" -- that Badian did not affect the price of Sedona's stock in March and April of 2001.[41] The statistics they rely on do not enable them to conclude that Badian did not affect the price. Since they did not read the transcripts or listen to the audio tapes they cannot credibly conclude that Badian did not act with the requisite *scienter*.

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[38] To violate Section 10(b) of the Exchange Act or Rule 10b-5 thereunder, including a market manipulation case a defendant must act with *scienter*, *Aaron v. SEC*, 446 U.S. 680, 695, 701-02 (1980), which the Supreme Court has defined as "a mental state embracing intent to deceive, manipulate, or defraud," *Ernst & Ernst v. Hochfelder*, 425 U.S. 185, 193 n.12 (1976). This Circuit has long recognized that *scienter* encompasses acting knowingly or in reckless disregard for the truth. *South Cherry Street, LLC v. Hennessee Group LLC*, 573 F.3d 98, 109 (2d Cir. 2009) (citations omitted). Recklessness, in turn, has been recognized to include an extreme departure from the standards of ordinary care which presents a danger of deceiving or misleading buyers or sellers that "was either known to the defendant or is so obvious that the actor must have been aware of it." *South Cherry Street LLC*, 570 F. 3d at 109; *SEC v. Steadman*, 967 F.2d 636, 641-642 (D.C.Cir.1992).

Although recklessness requires a stronger showing than simple negligence, evidence of "[a]n egregious refusal to see the obvious or to investigate the doubtful," may be used in the appropriate case to demonstrate recklessness. *South Cherry Street LLC*, 570. F.3d at 109; *Chill v. General Electric Co.*, 101 F.3d 263, 269 (2d Cir. 1996).

[39] *See* text and note 8, *supra*.

[40] *See* text and notes 9, *supra*.

[41] Prowse Depo., pp. 124:8 – 125:19.

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Illegal market manipulation is the injection of artificial information into the market, not moving the price of the stock; price movement therefore is not a prerequisite for proof of intent. *See e.g. SEC v. Kwak*, 2008 WL 410427, at *2 and n. 4 (D. Conn. Feb. 12, 2008).[42] Even if Prowse and Beloreshki were able to show that Sedona's stock price did not move in reaction to Badian's trades, their opinion is irrelevant and fails the first prong of the *Daubert* standard. Their analyses, statistical or anecdotal, do not address whether Badian knew or was reckless in not knowing the artificial information presented a danger of deceiving or misleading buyers or sellers or was so obvious that he must have been aware of it.

V. <u>Prowse and Beloreshki's Quantitative And Statistical Analyses Are Not Scientifically Reliable Evidence Of Badian's State Of Mind</u>

In addition to lacking relevance, Prowse and Beloreshki's statistical analyses are not scientifically reliable.

A. <u>Statistical Analyses In Securities Litigation Follow Well Defined Procedures To Be Scientifically Reliable</u>

Statistical analyses, commonly referred to as event studies, may be used to assess the impact of a particular event or series of events on the value of a company as reflected in its stock price. However, as judicial and recognized scholars have stressed, statistical analyses must be properly designed, include relevant data, and be reliably applied to be admissible evidence in court.[43]

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[42] See also, *GFL Advantage Fund, Ltd. v. Colkitt*, 272 F.3d 189, 206 (3rd Cir. 2001); *Chemetron Corp. v. Business Funds, Inc.*, 718 F.2d 725, 728 (5th Cir. 1983); In re *Solomon Analyst MetroMedia Litigation*, 544 F.3d 474, 482-483 (2d Cir. 2008).

[43] SEC Exhibit 402, Daniel L. Rubinfeld, *Reference Guide on Multiple Regression*, REFERENCE MANUAL OF SCIENTIFIC EVIDENCE, Federal Judicial Center 179-180 (2d ed. 2000) (Rubinfeld, *Reference Guide on Multiple Regression*); SEC Exhibit 401, David Kaye & David A. Freedman, *Reference Guide on Statistics*, REFERENCE MANUAL OF SCIENTIC EVIDENCE, Federal Judicial Center 123-126 (2d ed. 2000) ("Kaye and Freedman, *Reference Guide on Statistics*"); Mitchell and Netter, The Role of Financial Economics in Securities Fraud Cases: Applications at the Securities and Exchange Commission, 49 Bus. Law. 545 (February, 1994) ("Mitchell and Netter"); SEC Exhibit 420, MacKinlay, Event Studies In Economics and Finance, 35 J. of Econ. Lit. 13 (March 1997) ("MacKinlay"); Fisher, Multiple Regression

Event studies in securities litigation are typically done in several well defined steps. First, the event of interest and the event window are selected. MacKinlay, p. 14; Bhagat amd Romani, p. 144; Mitchell and Netter, p. 555 The event selected must be reflective of an issue in the case, such as how much did an investor lose because of the issuance of a fraudulent financial statement. Mitchell and Netter, p. 557. Moreover, the event selected must be one that can plausibly be viewed as capable of having an effect on a stock's price. The event window is usually the day that the activity commenced and one or two days thereafter. MacKinlay, p. 15; Mitchell and Netter, p. 555. Where continuous multiple events are examined, such as Badian's trades over a period of time, a cumulative return over that time period may be performed. Bhagat and Romani, p. 145. To be scientifically reliable, the event window must "fit" the period of illegal activity that has been alleged to have occurred. Mitchell and Netter, p. 558.

Second, a normal or expected stock price return over the event window had the event (e.g., Badian's alleged manipulative activity) not occurred is estimated. This is generally calculated using a model that incorporates market and/or industry effects. MacKinlay, p. 14; Bhagat and Romani, p. 145.

Third, the actual return – the percentage change from the day before the event to be analyzed (here Badian's trades) to the day the stock price learns of the event (Badian's trades) – is then computed. Where multiple events occurred in a continuous sequence (such as Badian's sales on consecutive days in March 2001), a cumulative return is calculated that includes each event day. MacKinlay, p. 15 and 21; Mitchell and Netter, at pp. 555 and 558.

In Legal Proceedings, 80 Columbia L. Rev. 702 (1980) ("Fisher"); Bagat & Romani, Event Studies and the Law: Part I: Technique and Corporate Litigation, 4 Am L. & Econ. Rev. 141, 143-44 (2002) ("Bagat & Romani").

Fourth, the predicted normal return is then subtracted from the actual return to determine what is called the abnormal return for the event or series of events. MacKinlay, p. 15; Bhagat and Romani, p. 146; Mitchell and Netter, p. 557. If a number of days are involved, as here, then a cumulate abnormal return is calculated. MacKinlay, pp. 15 and 21; Mitchell and Netter, pp. 555 and 558.

The results of these four steps are incorporated into a statistical analysis that is mathematically designed to determine whether the event(s) and the price change(s) are likely to occur together more frequently than by chance, which is typically determined by tests that determine statistical significance. Kaye and Freedman, *Reference Guide on Statistics,* pp. 122-123; Mitchell and Netter, p. 558; Fisher, p. 706; Bhagat and Romani, pp. 146-47. The statistical test determines whether the null hypothesis (Badian's trades did not affect Sedona's stock price) can be rejected at a specified level of confidence. The confidence levels that are typically used are 99%, 95% and 90%. The results are often reported as a p-value, typically 1%, 5%, or 10%. A p-value of 1% is deemed to be highly significant, 5% is deemed to be a desired level of significance, and 10% is viewed as significant enough to require it to be reported. Kaye and Freedman, *Reference Guide on Statistics*, at p. 123-26.[44]

[44] This does not mean that a p-value of 10% is not suggestive of significance. Fisher, Multiple Regression In Legal Proceedings, 80 Colum. L. Rev. 702, 717-719 (May, 1980). Although the 5% criterion is typical, reporting of more stringent 1% significance tests or less stringent 10% test can also provide useful information. SEC Exhibit 402, Rubinfeld, *Reference Guide on Multiple Regression*, at p. 194.

Prowse admitted in his deposition that a p-value of 90% is indicative of significance in securities cases, a fact that he emphasized in an article he wrote and relied upon in preparing the Initial Report Prowse Depo. pp. 45:18 – 46:18; SEC Exhibit 423, Prowse and Nielsen, *Dura's Impact on* Damages, Securities Litigation, 22 Insights p. 16, 22 (July 20018).

Although Prowse referred to 90% as weak in his deposition, he does not do so in the Insight article, and it is the p-value he has used in other cases. Prowse and Beloreshki have used as 10% as the level of significance in two recent similar cases. SEC Exhibit 245, [Proposed] Expert Report of Prowse and Beloreshki in *Pet Quarters v. Thomas Badian*, at n. 21 (Am. Arb. Assoc Case No. 50 180T 00041 07 February 19, 2009) (10% is the confidence level "occasionally used by economists and statisticians").

Where statistical analyses are not properly constructed, the expert's opinion has been held to be inadmissible. *General Elec. Co. v. Joiner*, 522 U.S. 136, 148 (1997); Kaye and Freedman, *Reference Guide on Statistics*, pp. 90-104. Expert testimony, including opinions based on regression analyses, must "fit" the particular facts of the case. *Daubert*, 509 U.S. at 591; *see also Concord Boat Corp. v. Brunswick Corp.*, 207 F.3d 1039, 1055 (8th Cir. 2000). Even if a theory or methodology employed by an expert meets the *Daubert* factors, it should not be admitted *"if it does not apply to the specific facts of the case."* *Concord Boat Corp.* 207 F.3d at 1056 (Emphasis added).

In addition, the results of the regressions must be properly interpreted. A p-value above the designated level of significance only means that the null hypothesis cannot be rejected. A lack of significance may **not** be reliably interpreted as proof that the null – Badian's trades did not affect Sedona's stock price –is true. The most that can be said for a failure to satisfy one of the three levels of significance is that the null is of "little or no interest." To claim more than that is not scientifically reliable. Kaye and Freedman, *Reference Guide on Statistics*, p. 122.

B. The Time Frame From June 2000 Through June 2002 Used In Half Of Prowse And Beloreshki's Analyses Is Not Relevant Nor Reliable

An event window is the period in which information about the event becomes publicly available. Mitchell and Netter, p. 558. Since stock prices react relatively quickly to new public information, recognized scientific literature advises that the window be restricted to the shortest period possible, generally two or three days around each release of new information. Mitchell and Netter, pp. 559-60. Long windows have the tendency to include what is referred to in the literature as "noise and information from other events," that make the assessment of the relationship between the event and price movement difficult, if not

impossible. Mitchell and Netter, p. 558. Consequently, recognized authorities caution that "the analysis of long-run abnormal return is treacherous." Bhagat and Romani, p. 151.

This view is reflected in the case law, which requires statistical analyses to "fit" the facts of the case. *In re Security Capital Assurance, Ltd.*, 2010 WL 1372688, at *30 (S.D.N.Y. March 31, 2010). Whether viewed through a statistician's or a court's prism, Prowse and Beloreshki's regression analyses of the two- year time period are not statistically reliable to determine whether Badian's trading activity - including double-booked trades in March 2001 and his wash trades in April 2001 - impacted Sedona's stock price. The two year time period they selected for half of their analyses – June 2000 through June 2002 -- includes five months before the Debenture was even purchased, and an astonishingly nine months before Badian could even submit a conversion based on market prices. It also includes eight months after Sedona announced in October 2001 that it had learned that Badian and his colleagues were shorting its stock in violation of the covenant in the Debenture and Badian wrote his brother that they had to clean up their act and make amends for what they had done.[45] It is simply too great a stretch to suggest that this time period is reflective of what Badian did in March and April of 2001. For this simple reason all of Prowse and Beloreshki's analyses of the June 2000 through June 2002 time period should be excluded from the trial.

[45] SEC Exhibit 137.

C. The Flags Used In Three Of The Four Regressions For The March Through May Time Period Are Also Not Scientifically Reliable

Prowse and Beloreshki include four regressions for a shorter time period -- March 1 through May 31, 2001 -- in their Initial Report.[46] Three of the four regressions used what are referred to as flags. One category is labeled sell flag, a second is labeled buy flag, a third is labeled transaction flag, and the fourth is labeled principle flag. Superficially, this seems to be a fairly straightforward way to determine the relationship between Badian's trades and Sedona's stock price over the three month time frame. But it is not scientifically reliable for three simple reasons.

First, Badian engaged in four different strategies over the three-month period. Between February 21 and March 23, 2001, he sold Sedona stock aggressively. More pointedly, he then sought to crush Sedona's stock price beginning March 16, with the price falling to $0.75 on March 23, 2001. On March 26, 2001, he switched direction and pushed the stock above $1.00, the level required to keep it listed for trading. On March 27, 2001, he resumed his selling pressure until the stock hit $0.78125 on March 29, 2001 and ranged between $0.625 and $0.85 for the next six business days. [redacted][47] Consequently, analyzing March 1 through May 31, 2001, assuming it reflects a consistent trading strategy does not fit the facts of the case. It is not divided into the appropriate time segments to determine the significance of

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[46] Two days after Beloreshki was deposed and at 8:00 p.m. the evening before Prowse was deposed, Badian provided the SEC with the back-up material that included over 4 gigabits of electronic data he had been ordered to produce on December 23, 2009. When hidden data on the electronic files was uncovered, the SEC discovered that Prowse and Belorshki had other regressions that demonstrated significance they failed to address in their Initial Report. SEC Exhibit 407, March 4, 2010 Piper to SEC transmittal letter. After being confronted with other regressions the SEC found in the back-up material that were ordered to produce by an order of the Court dated December 23, 2009, Prowse and attempted to justify their omissions.

[47] [redacted]

each of Badian's strategies. MacKinlay, pp. 31-32. As Glosten and Jones explained in their Rebuttal Report, although the length of time in the March through May 2001 period is shorter than the two year period in the longer time frame, the use of flags in the shorter time period similarly masks the impact of Badian's different manipulative strategies on Sedona's stock price.[48]

Second, two of the flags –transfers and principles -- represent information that Prowse and Beloreshki admit they do not know was publicly available so as to affect the market for Sedona's stock.[49] Thus, they have not met their burden of proof sufficient to have the regressions with these flags included in their analyses, and, therefore, their opinion based on these regressions should be excluded from the trial. *See* MacKinlay, pp. 16-17. Bhagat and Romani, at p. 143-45; Mitchell and Netter, pp. 556-57.

Third, the sell and buy flags Prowse and Beloreshki rely upon in three of the four regressions included in their Initial Report fail to take into consideration an important variable, the magnitude of the sales relative to each other and to the market volume. In this case, there are 57 trading days that are flagged as sell days. However, 25 days of these "sell days" are also flagged as buy days. Thus, their relative weight is extremely important since almost half of the days were designated as both a buy and a sell. Without accounting for the relative volume of each flag, Prowse and Beloreshki have skewed the results towards the null hypothesis. The omission is particularly important here because the volume in the time period Prowse and Beloreshki selected as the event window varies widely from day to day, and particularly between the periods in which Badian's trading strategy changed. The flags without relative volume are too weak to find significance if it existed and therefore are not scientifically

[48] SEC Exhibit 421, Gloston-Jones Rebuttal Report, ¶ 44.

[49] Prowse Depo., pp. 34:14 – 34:22; 39:7 – 39:16; 40:9 – 40:17; and 185:8 – 185:22.

reliable. *See,* Rubinfeld, *Reference Guide on Multiple Regression*, p. 199-200 and MacKinlay, pp. 31-32.

Although it is sometimes difficult to draw general conclusions from the inability of a regression to detect significance, here it is quite easy. The regressions Prowse and Beloreshki rely upon are inadequately designed to determine the relationship of Badian's trading to Sedona's stock price because: (1) the flags fail to account for the changes in strategy over the time period analyzed; (2) variables which have not been shown to be publicly available such that they could affect the market have been flagged; and (3) the flags fail to take into consideration the relative volume of sales and purchases to market volume. As has been authoritatively emphasized, "an analysis is only as good as the data on which it rests." Kaye and Freedman, *Reference Manual on Scientific Evidence*, text and n. 90 and p. 125; MacKinlay, p. 31. And, as the Supreme Court emphasized in *Daubert*, the analyses must "fit" the facts of the case. Here the three flag regressions Prowse and Beloreshki rely upon do neither and consequently are scientifically unreliable. Rubinfeld, *Reference Guide on Multiple Regression*, p. 185.

When a study fails to reject the null, statisticians are advised to determine this is so because the study lacks power (or what is known as a high Type II error). Kaye and Freedman, *Reference Manual on Scientific Evidence*, p. 125 and n. 144; MacKinlay, at p. 28. In such situations, analysts investigate whether the failure to find significance is due to the lack of a scientifically reliable design for the study, or because the criteria selected for the study are not reliable, or are not what the analysts claim them to be. Kaye and Freedman, *Reference Manual on Scientific Evidence*, pp. 107 and 125-128; MacKinlay, at p. 31-32. Although the calculation of power and Type II error can be done using off-the-shelf readily available software, Prowse

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and Beleroshki did not do a power study, and were unable to explain why they did not do so in their depositions.[50] This is particularly telling here, because they selected the regressions to include in their analyses after they knew the results that had previously been run in 2003.[51] [redacted].[52] [redacted].[53]

Contrary to what Prowse and Beloershki would have the Court believe, the academic literature states that although the use of flags in regressions to ascertain the impact of trades on a daily basis may appear to be desirable, flags are not adequate alone to assess significance. *See, e.g.*, Meulbrock, *An Empirical Analysis of Illegal Insider Trading*, 47 J. Fin. 1161, 1691-96 (Dec. 1992.[54] Prowse and Beloreshki draw improper inferences from their flag regressions of daily data that are not sufficiently refined to identify significance when it exists, as reflected in the net daily trade volume regressions they performed and evidently attempted to conceal from the SEC in their Initial Report. The omission of an important variable is sufficient to make the regression relied upon scientifically unreliable. Rubinfeld, *Reference Guide on Multiple Regression*, at pp. 189.

[50] Prowse Depo., pp. 397:15-402:9.

[51] Prowse Depo., pp. 131:3-134:10.

[52] [redacted]pl. [redacted]

[53] [redacted]

[54] Prowse and Beloreshki attempt to defend their use of flags in their Sur-Rebuttal Report by claiming that Glosten and Jones did the same thing in their Price Impact Model. Nothing could be further from the truth. Unlike Prowse and Beloreshki , Glosten and Jones used flags to identify whether a transaction at a bid or ask was buyer or seller initiated, and then analyzed the volume, because, as they explained, "[l]arger trades are expected to have a bigger impact than smaller trades so the price impact is modeled as a linear function of the trading volume." SEC Exhibit 421, G-J Rebuttal Report, at ¶59.

D. Prowse and Beloreshki Fail To Adequately Explain Why They Concealed The Analyses That Refute Their Hypothesis

Prowse and Beloreshki performed regressions that use net trading as the independent variable, but omitted to even discuss them in their Report,[55] and apparently attempted to conceal these regression in the electronic data they were compelled by the Court to produce in response to a SEC subpoena.[56] Moreover, Prowse and Beloreshki attempts to discredit the regression[s?] with so-called corrections fail because they are not viewed as scientifically reliable methods.[57] The recognized scientific literature stresses that when multiple regressions produce conflicting results, the answer is not, as Prowse and Beloreshki have done here, to throw out those that demonstrate significance, and only report those that fail to find statistical significance applying some mathematical correction. Rather, a proper analysis must examine whether the models that reveal significance are better designed, or include more powerful variables.[58]

When they learned that their approach was incorrect, Prowse and Beloreshki then claimed the regressions that used net trading volume were invalid because of an after-the-fact discovery of what they deem to be an outlier.[59] An outlier is a data point that has particular influence, and the authoritative literature advises analysts to examine the reasons why such data points may be more influential than others. They are cautioned not to simply exclude the

[55] Prowse Depo, pp. 105:10-114:16.

[56] SEC Exhibits 258 and 259.

[57] Kaye and Freedman, *Reference Manual on Scientific Evidence*, p. 125; SEC Exhibit. 275 (BP Depo. Ex. 39), Tabak, *Multiple Comparisons and the Known or Potential Error Rate*, 19(2) J. Forensic Econ. 231, 233 (2007); Beloreshki Depo., p. 402-03; Prowse Depo., p. 268.

[58] SEC Exhibit. 275, Tabak, *Multiple Comparisons and the Known or Potential Error Rate*, 19(2) J. Forensic Econ. 231, 233 (2007): SEC Exhibit 263, Perneger, What's wrong with Bonferroni Adjustments, 216 1236, 1237 (April 1998); Kaye, *Reference Guide on Statistics*, pp. 125-28; SEC Exhibit 424, Rothman, No Adjustment Are Needed for Multiple Comparisons, 1 J. of Epidemiology, 43, 46 (January 1990).

[59] Prowse Depo., pp. 350:4-353:5, 413:14-414:16.

outlier data, but to determine whether it is false or particularly important.[60] Contrary to the authoritative literature, Prowse and Beloreshki did not examine the data to determine whether other outliers existed,[61] and, when they examined the data they denominated an outlier, they concluded it was accurate.[62] Again, contrary to the authoritative literature, they simply concluded that the influential day had to be excluded from the regressions as an outlier even though they conceded it was accurate.[63] This simply bad science designed to reach a pre-determined result.

VI. Prowse and Beloreshki Means Analyses Obscured Statistical Significance Because Of Their Segregation Of The Data Into Different Parts

Prowse and Beloreshki also performed means regressions they claim verify the accuracy of their approach in excluding the regressions that reveal statistical significance. Again they fail to follow the proscriptions in the statistical literature. In what they refer to as a parametric test, Prowse and Beloreshki made four comparisons. First, they compared the 57 days they characterize as Rhino transaction days with the 7 days in which there was no activity. Second, they divide the 57 transaction days into three groups. One they label net buy days (2), another they label net zero days (5) and the third they label net sell days (50). Then they ran a statistical comparison of the means on the comparison. One compared the 57 transaction days to the 7 days with no transactions. A second compared net sales days to net zero days. A third compared net sales days to net buy days. Based on these separate calculations Prowse and Beloreshi concluded that they found no statistical significance in their means analyses.[64]

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[60] SEC Exhibit 285, Kennedy, A Guide to Econometrics, at p. 298-301 (MIT Press 1998).

[61] Prowse Depo., pp. 415:11-416:15.

[62] Prowse Depo., pp. 421:21-422:2.

[63] Prowse and Beloreshki Sur-Rebuttal Report, at ¶28; Prowse Depo. at pp. 413:24-444:8

[64] P-B Initial Report, ¶¶55-56.

Prowse and Beloreshki, however, failed to properly model the parametric test they relied upon for their conclusions. It is important to carefully consider all options when determining how to model a statistical test[65] Prowse and Beloreshki admittedly failed to do so here. In fact, they gave it no thought.[66]

The appropriate parametric analysis that Prowse and Beloreshki did not consider simply compares the 50 net sell days with the 14 other days in the aggregate (the 7 no transaction days, the 2 net buy days, and the7 net zero days). [redacted][67] Prowse and Beloreshki's failure to even consider this obvious alternative is further evidence that their Reports are not based on scientifically reliable applications of statistical analyses. Kaye and Freedman, *Reference Guide on Statistics*, at pp. 107-08.

As a Senior Judge in this District stated in response to similarly questionable quantitative analyses:

> In assessing the reliability of an expert opinion, a resort to common sense is not inappropriate. [The rejected expert's opinion here] reaches a result which any average person could readily recognize as preposterous.

Johnson Electric North America, Inc., v. Mabuchi Motor America Corp., 103 F. Supp. 2d 268, 286 (S.D.N.Y. 2000).

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[65]SEC Exhibit 401, Kaye and Freedman, *Reference Guide on Statistics*, pp. 90-104; SEC Exhibit 420, MacKinlay, pp. 90-104.

[66] Prowse admitted that there were other ways to perform a parametric test, but they he and Beloreshki did not think about the alternatives. Prowse Depo., pp. 283-84. The SEC asked Beloreshki similar sets of questions in his second deposition, in which Beloreshki admitted he did not know whether they ever even considered comparing the net sells to days where they was no trading, or net buy, or net zero for days with activity. Beloreshki Depo , pp. 447-454.

[67] [redacted].

CONCLUSION

For the reasons set forth above, the SEC respectfully requests the Court to grant its motion *in limine*, and exclude Prowse and Beloreshki's Expert Report, Sur-Rebuttal Report, and their testimony in this case.

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Respectfully submitted,

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